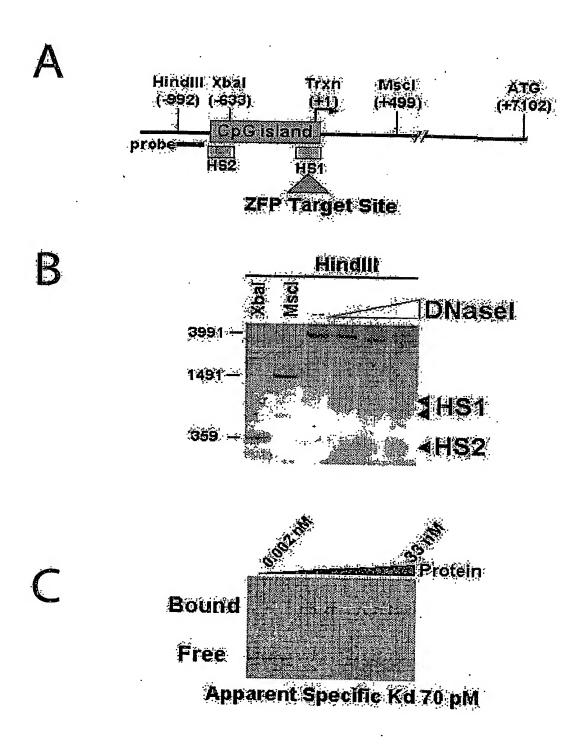
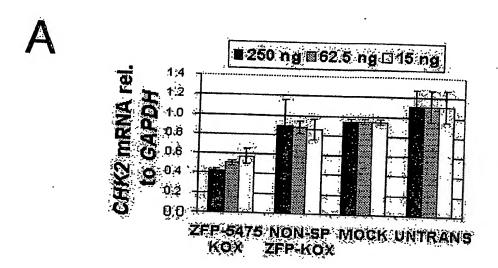
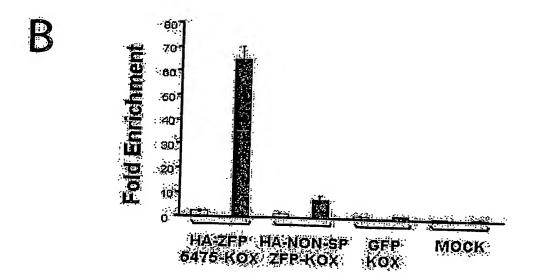
Fig. 1



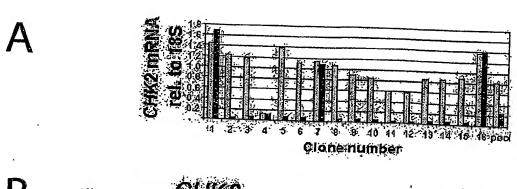
**BEST AVAILABLE COPY** 

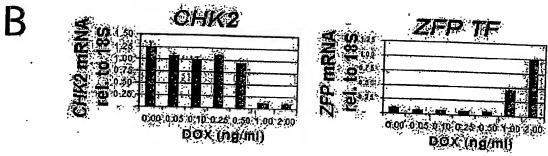
Fig. 2

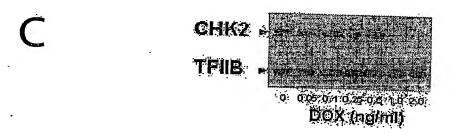


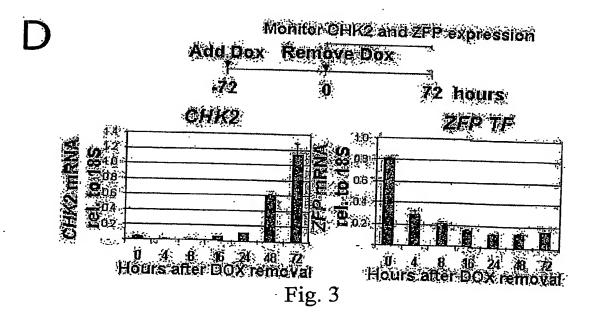






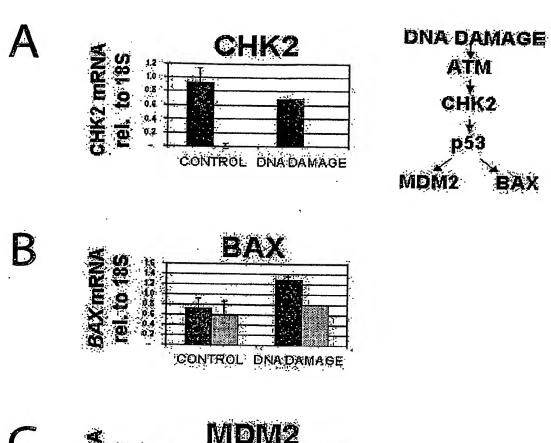






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Fig. 4



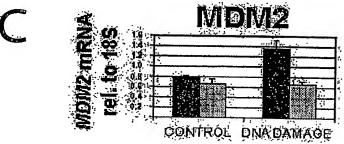
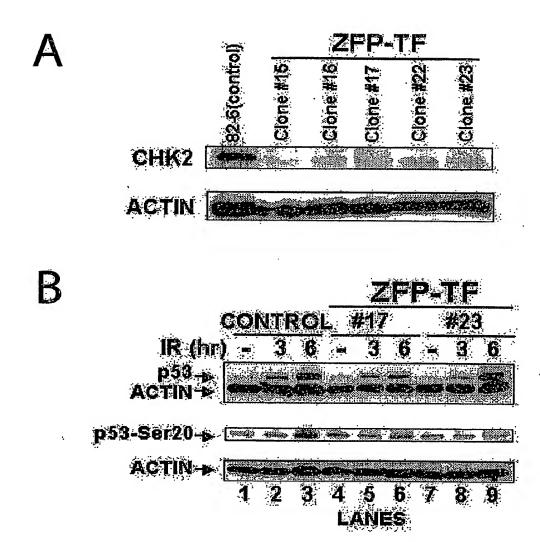


Fig. 5



#### 6/15

## FIGURE 6

MAERPFQCRICMRNFS<u>RSDHLSR</u>HIRTH**TGEKP**FACDICGRKFA<u>DNRDRTK</u>HT KIH**TGGQRP**YACPVESCDRRFS<u>DRKTLIE</u>HIRIH**TGQKP**FQCRICMRNFS<u>TSSG</u> <u>LSR</u>HIRTH**TGSQKP**FQCRICMRNFS<u>RSDHLSE</u>HIRTH**TGEKP**FACDICGRKFA<u>T</u> <u>SSDRTK</u>HTKIHLRQKDAARN

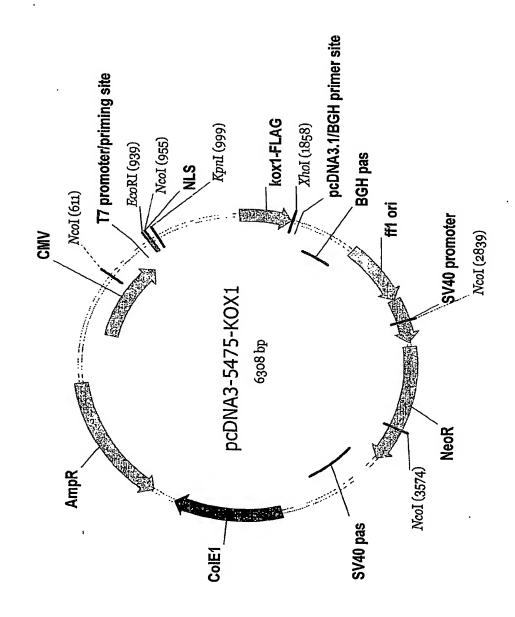
SEQ ID NO: 27

# 7/15 FIGURE 7

MAERPYACPVESCDRRFS<u>TSADLTE</u>HIRIH**TGQKP**FQCRICMRNFS<u>ASANLSR</u>HIRTH**TGGERP**FQCRICMRNFS<u>RSDALST</u>HIRTH**TGEKP**FACDICGRKFA<u>DRSTRTK</u>HTKIHT**GSQKP**FQCRICMRNFS<u>RSDVLSA</u>HIRTH**TGEKP**FACDICGKKFA<u>DRSNRIK</u>HTKIHLRQKDAAR

(SEQ ID NO: 53)

FIG.



7	GACGGATCGG	GAGATCTCCC	GACGGATCGG GAGATCTCCC GATCCCCTAT GGTCGACTCT CAGTACAATC TGCTCTGATG CCGCATAGTT	GGTCGACTCT	CAGTACAATC	TGCTCTGATG	CCGCATAGTT
	CTGCCTAGCC	CTCTAGAGGG	CTGCCTAGCC CTCTAGAGGG CTAGGGGGATA CCAGCTGAGA GTCATGTTAG ACGAGACTAC GGCGTATCAA	CCAGCTGAGA	GTCATGTTAG	ACGAGACTAC	GGCGTATCAA
71	AAGCCAGTAT	CIGCICCCIG	AAGCCAGTAT CIGCICCCIG CIIGIGIGIT GGAGGICGCI GAGIAGIGCG CGAGCAAAAI IIAAGCIACA	GGAGGTCGCT	GAGTAGTGCG	CGAGCAAAAT	TTAAGCTACA
	TICGGICATA	GACGAGGGAC	ITCGGICATA GACGAGGGAC GAACACACAA CCICCAGCGA CICAICACGC GCICGIIITA AATICGAIGI	CCTCCAGCGA	CTCATCACGC	GCTCGTTTTA	AATTCGATGT
141	ACAAGGCAAG	GCTTGACCGA	ACAAGGCAAG GCTTGACCGA CAATTGCATG AAGAATCTGC TTAGGGTTAG GCGTTTTGCG CTGCTTCGCG	AAGAATCTGC	TTAGGGTTAG	GCGTTTTGCG	CIGCIICGCG
	TGTTCCGTTC	CGAACTGGCT	TGTTCCGTIC CGAACTGGCT GITAACGTAC TICTTAGACG AATCCCAAIC CGCAAAACGC GACGAAGCGC	TTCTTAGACG	AATCCCAATC	CGCAAAACGC	GACGAAGCGC
211	ATGTACGGGC	CAGATATACG	ATGTACGGGC CAGATATACG CGTTGACATT GATTATTGAC TAGTTATTAA TAGTAATCAA TTACGGGGTC	GATTATTGAC	TAGTTATTAA	TAGTAATCAA	TTACGGGGTC
	TACATGCCCG	GICIAIAIGC	TACATGCCCG GICTATATGC GCAACTGTAA CTAATAACTG ATCAATAATT ATCATTAGTT AATGCCCCAG	CTAATAACTG	ATCAATAATT	ATCATTAGTT	AATGCCCCAG
281	ATTAGTTCAT	AGCCCATATA	ATTAGTICAI AGCCCAIAIA IGGAGTICCG CGITACAIAA CITACGGIAA AIGGCCCGCC IGGCIGACCG	CGTTACATAA	CTTACGGTAA	ATGGCCCGCC	TGGCTGACCG
	TAATCAAGTA	TCGGGTATAT	TAATCAAGTA TCGGGTATAT ACCTCAAGGC GCAATGTATT GAATGCCATT TACCGGGCGG ACCGACTGGC	GCAATGTATT	GAATGCCATT	TACCGGGCGG	ACCGACTGGC
351	CCCAACGACC	CCCGCCCATT	CCCAACGACC CCCGCCCATT GACGTCAATA ATGACGTATG TTCCCATAGT AACGCCAATA GGGACTTTCC	ATGACGTATG	TTCCCATAGT	AACGCCAATA	GGGACTITCC
	GGGTTGCTGG	GGGCGGGTAA	GGGTIGCTGG GGGCGGGIAA CIGCAGTIAI IACIGCAIAC AAGGGIAICA IIGCGGITAI CCCIGAAAGG	TACTGCATAC	AAGGGTATCA	TIGCGGTTAT	CCCTGAAAGG
421	ATTGACGTCA	ATGGGTGGAC	ATTGACGICA AIGGGIGGAC TAITIACGGI AAACIGCCCA CIIGGCAGIA CAICAAGIGI AICAIAIGCC	AAACTGCCCA	CTTGGCAGTA	CATCAAGIGT	ATCATATGCC
	TAACTGCAGT	TACCCACCTG	TAACTGCAGT TACCCACCTG ATAAATGCCA TTTGACGGGT GAACCGTCAT GTAGTTCACA TAGTATACGG	TTTGACGGGT	GAACCGTCAT	GTAGTTCACA	TAGTATACGG
491	AAGTACGCCC	CCTATIGACG	AAGTACGCCC CCTATTGACG TCAATGACGG TAAATGGCCC GCCTGGCATT ATGCCCCAGTA CATGACCTTA	TAAATGGCCC	GCCTGGCATT	ATGCCCAGTA	CATGACCTTA
	TTCATGCGGG	GGATAACTGC	TTCATGCGGG GGATAACTGC AGTTACTGCC ATTTACCGGG CGGACCGTAA TACGGGTCAT GTACTGGAAT	ATTTACCGGG	CGGACCGTAA	TACGGGTCAT	GTACTGGAAT
					N	Ncol	

GCCAAAACCG CGGTTTGGC TTGACGTCAA AACTGCAGTT CCCATTGACG GGGTAACTGC AGAGAACCCA TCTCTTGGGT GTTTAAACTT CAAATTTGAA TCGCTATTAC CATGGTGATG GTACCACTAC CTCCACCCCA GAGGTGGGGT ACAACTCCGC TGTTGAGGCG GACCGATTGA CTGGCTAACT GCTGGCTAGC CGACCGATCG ATTTCCAAGT AGCGATAATG TAAAGGTTCA AAATGTCGTA TTTACAGCAT CGTCTCGAGA GCAGAGCTCT GGAGACCCAA CCICIGGGII Ncol GTATTAGTCA TAGCGGTTTG ACTCACGGGG CATAATCAGT TGAGTGCCCC GGACTITCCA CCTGAAAGGT GTCTATATAA TGCCACCTC CAGATATATT ATTAATACGA CICACTATAG TAATTATGCT GAGTGATATC GTACATCTAC CATGTAGATG AAAATCAACG ACGGTGGGAG ATCGCCAAAC TTTAGTIGC CTACTTGGCA TGGGCGTGGA ACCCGCACCT GCTTATCGAA TTTTGGCACC GTAGGCGTGT CATCCGCACA GATGAACCGT AAAACCGTGG CGAATAGCTT TGGGACTITC TGGGAGTTTG ACCCTCAAAC ACCCTGAAAG AGTACATCAA TCATGTAGTT CAAATGGGCG GTTTACCCGC CTGCTTACTG GACGAATGAC 561 631 701 771 841

MAPKKKRKV.

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GACCACTGGA AGTICCTACA TAAACACCTG AAGTGGTCCC

GICCCGGACA

CGATTCAGIG ATTGACGGAC CAGGGCCTGT

GCTAAGTCAC TAACTGCCTG

1541

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CCCCAAGAAG AAGAGGAAGG TICICCLICC ACACCACCTT AAGCGATCGC GGTGGTACCG GGGGTTCTTC CCACCATGGC TGTGGTGGAA TTCGCTAGCG TICGACTAGG TGATCAGGIC AAGCIGAICC ACTAGICCAG 911

KpnI

GCGTAACTIC AGTCGTAGTG ACCACCTGAG CCGGCACATC CGCACCCACA CAGGCGAGAA GCCTTTTGCC TGTGACATTT GTGGGAGGAA ATTTGCCGAC CGCATTGAAG TCAGCATCAC TGGTGGACTC TIGGCCCTGG CGIGTITCGI AIGGTICTAI GIGIGCCCGC CIGTCGCCGG CAIGCGIACG GGACAGCICA GICCGCICIT CGGAAAACGG ACACIGIAAA CACCCICCIT IAAACGGCIG AACCGGGACC GCACAAAGCA TACCAAGATA CACACGGGCG GACAGCGGCC GTACGCATGC CCTGTCGAGT CCTGCGATCG CCGCTTTTCT GACAGGAAGA CACTTATCGA GCATATCCGC ATCCACACCG GTCAGAAGCC TAGGIGIGG CAGICIICGG CGAATCTGCA TGCGTAACTT CAGTACCAGC AGCGGGCTGA GCCGCCACAT CCGCACCCAC AACACATTCG CACCCACACA GGCGAGAAGC CTTTTGCCTG TGACATTTGT GGGAGGAAAT TTGCCACCAG ACAGGATCTC AGAAGCCCTT CCAGTGTCGA ATCTGCATGC GTAACTTCAG TCGTAGTGAC CACCTGAGCG TGTCCTAGAG TCTTCGGGAA GGTCACAGCT TAGACGTACG CATTGAAGTC AGCATCACTG GTGGACTCGC GAAAACGGAC ACTGTAAACA CCCTCCTTTA AACGGTGGTC CGGCGGTGTA GGCGTGGGTG CGGCATGGAT ď ტ لتبا Н CCCGGGGATC GGCCCCTAG ĸ H ద ტ 吆 × ပ ß CGTATAGGCG SAAGGICACA GCTIAGACGI ACGCAIIGAA GICAIGGICG ICGCCCGACI CAGCGACCGC ACAAAGCATA CCAAGATACA CCTGCGCCAA AAAGATGCGG GGACGCGGTT TTTCTACGCC П ĸ R N F z ധ 云 저 လ ტ TGGGAATCGA TGGGGTACCC TTCCAGTGTC GAATCTGCAT ACCCTTAGCT ACCCCATGGG AAGGTCACAG CTTAGACGTA Σ GTGAATAGCT ტ ນ Σ E ပ I I H ഗ വ GGCGAAAGA CIGICCIICI TIGIGIAAGC GIGGGIGIGI CCGCICTICG H H GGTTCTATGT о С ပ × 저 Z **~** Ø 团 Z H GGCCGTGTAG GCGTGGGTGT GTCGCTGGCG TGTTTCGTAT ~~~~~ ဓ ¥ ပ <u>ح</u> T Н 저 ~ ద Ø GGACGCTAGC CTTCCAGTGT ပ R D s D z 981 1051 1121 1191 1261 1401 1331 1471

AGGAGTGGAA GCTGCTGGAC ACTGCTCAGC AGATCGTGTA CAGAAATGTG ATGCTGGAGA ACTATAAGAA CCTGGTTTCC TTGGGTTATC AGCTTACTAA GCCAGATGTG ATCCTCCGGT TGGAGAAGGG AGAAGAGCCC CGGTCTACAC TAGGAGGCCA ACCTCTTCCC TCTTCTCGGG ATCAAATCAT TAGTTTAGTA GICITIACAC TACGACCICI IGATATICII ഗ 田 × Z ტ TGCCTGGTGG AGAGAGAAT TCACCAAGAG ACCCATCCTG ATTCAGAGAC TGCATTTGAA ACCGACCACC ICICICITIA AGIGGIICIC IGGGIAGGAC TAAGICICIG ACGIAAACII A F E 闰 н 田 召 I I ß 凶 Ω ~~~~~~ ICCICACCIT CGACGACCIG IGACGAGICG ICTAGCACAI > 0 T H P М GGACCAAAGG AACCCAATAG TCGAATGATT (A) T A O ы H O بر ق ഥ Ы 凹 W L V 3 1611 1681 1751

GTCTGAGTAG CAATAGCAGG TCCCCCATAG GCCGAAAGGG AATTIGGGCG CCTTCCTTGA CAGACTCATC GTTATCGTCC AGGGGGTATC GGCGATGTGA CGGCTTTCCC GGAAGGAACT CCGCTACACT GACCCCAAAA TTAAACCCGC CTTTGACGTT GAAACTGCAA GAGGCCCGT CTCCGGGCA CICCCCCGIG GAGGGGCCAC GCATCGCALT CGTAGCGTAA ATTGGGAAGA CTGGGGCTCT TAACCCTTCT GACCCCGAGA CGCAGCGTGA GCGTCGCACT CCACGTTCGC GGTGCAAGCG ACGGCACCTC TGCCGTGGAG GTTTTTCGCC CAAAAAGCGG TCAACCCTAT GATGACAAGT AAGCTTCTCG AGTCTAGCTA AAGGGGGAGG TCAGATCGAT ACTCCTTTAA TICCCCCICC AAAGAACCAG TITCTIGGIC TIGITICCCC AACAAACGGG TGAGGAAATT GGTGGTTACG CCACCAATGC TCCTTTCTCG AGGAAAGAGC TTAGTGCTTT AATCACGAAA GACTATCTGC CTGATAGACG GGAACAACAC TTCGAAGAGC CAGCCATCTG GTCGGTAGAC CCTAATAAA GGATTATTT GCAGGACAGC CGTCCTGTCG TCTGAGGCGG AGACTCCGCC AAAGAAGGGA CCCAAGGCTA CGGCGGGTGT GCCGCCCACA PTTCTTCCT GGGTTCCGAT GGCCATCGCC CCGGTAGCGG GTTCCAAACT CTACTGTTCA TTCTAGTTGC AAGATCAACG ACTGTCCTTT TGACAGGAAA GTGGGGTGGG CACCCCACCC CICIAIGGCI GAGATACCGA GCATTAAGCG GAGGAAAGCG CATCCCTTTA CGTAATTCGC CICCITICGC GTAGGGAAAT AGTGCATCAC TCACGTAGIG GTGGACTCTT Ω GTTCCTGCTG CAAGGACGAC CGACTGTGCC GCTGACACGG TGCCACTCCC ACGGTGAGGG ATTCTGGGGG TAAGACCCCC ATGCGGTGGG TACGCCACCC CTGTAGCGGC GACATCGCCG CTAGCGCCCG TTCTTTAATA GATCGCGGGC TAAATCGGGG ATTTAGCCCC GGGTGATGGT CCCACTACCA CAGTIGACTA GTCAACTGAT TGATCAGCCT ACTAGTCGGA CCCTGGAAGG SGGACCTTCC GTGTCALTCL CACAGTAAGA CATGCTGGGG GTACGACCCC CCCACGCGCC GCAGTTCGAG SGGTGCGCGG reccaecec ACGGTCGCGG CGTCAAGCTC AACTIGALTA LTGAACTAAT GGAGTCCACG Þ 1821 1891 1961 2031 2171 2451 2101 2241 2311 2381

TAACAAAAT ATTTTTA CCCAGGCAGG GGGTCCGTCC CTCCCCAGCA CCGCCCATCC GAGCCAGATA GAGGGGTCGT GGCGGGTAGG AGTTGGGATA TGAGCTGATT ACTCGACTAA CCCCAGGCTC GGGGTCCGAG AGTCCCCAGG TCAGGGGTCC GCCCCTAACT CGGGGATTGA CACCTGAGAA CAAGGTTTGA CCTTGTTGTG TCGGCCTATT GGTTAAAAA GTCAGCAACC AGGTGTGGAA CCGTCTTCAT ACGTTTCGTA CGTAGAGTTA ATCAGTCGTT GGTATCAGGG TGTGGAAAGT ACACCTTTCA TCCACACCTT TAGTCAGCAA CCATAGICCC CCAATTTTT AGCCGGATAA TCAGTTAGGG AGTCAATCCC CAGTCGTTGG AAACCCCTAA GGAATGTGTG TITGGGGAIT CCTTACACAC ATCTCAATTA TAGAGTTAAT GCATCTCAAT ATATTCCCTA AAGAAATTAT TTAATTCTGT TATAAGGGAT AATTAAGACA CAAAGCATGC GITICGIACG TGCAAAGCAT CCTCAGGTGC TCTTTTGATT AGAAAACTAA TTAACGCGAA AATTGCGCTT GGCAGAAGTA CAGAAGTATG GICTICATAC 2521 2731 2591 2661

CCTAGCAAAG GGATCCGAAA GGATCGTTTC TTTATGCAGA AAATACGICI CCTAGGCTTT TCGGCTATGA AGCCGATACT GCCCCGGTT CGCGGGCCAA CTATCGTGGC GATAGCACCG ACTGGCTGCT TGACCGACGA ATCCATCATG TAGGTAGTAC GCGAAACATC CGCTTTGTAG AAGAGCATCA TTCTCGTAGT ATTTTTTA TAAAAAAAT TTTTGGAGG CTGTCCTACT GAGAGGCTAT CICICCGAIA GICGCGICCC AAAAACCTCC GACAGGATGA CAGCGCAGGG GGCAGCGCGG CCGTCGCGCC GCGGGAAGGG CGCCCTTCCC CCGAGAAAGT GGCTCTTTCA CGACCACCAA GATCTGGACG GCIGGIGGIT CTAGACCTGC CICCGCCCCA IGGCIGACIA ACTCCTCCGA ACCGACTGAT TGAGGAGGCT CTGATCAAGA GACTAGTTCT CGCTTGGGTG GCGAACCCAC AAGGCCGACA TGCAGGACGA ACGICCIGCI ACAGTGACTT TTCCGGCTGT TGTCACTGAA CTTGCTCCTG GAACGAGGAC CCTGCCCATT GGACGGGTAA CGATCAGGAT GCTAGTCCTA CCAGAAGTAG GAGGCGGGGT GGTCTTCATC ATTTTCGGAT TAAAAGCCTA GIICICGGC CAAGAGGCCG TGCCGCCGTG ACGCCGCCAC CTGAATGAAC GACTTACTTG ACGAGCTGCA TGCTCGACGT GATCCGGCTA GTCATCTCAC CAGTAGAGTG GGCCAGAACA CTAGGCCGAT CCGGTCTTGT TCCGCCCAGT TCCGCCCATT AGGCGGGTAA GACTCGATAA TTGTATATCC AACATATAGG CTGAGCTATT TTGCACGCAG AACGTGCGTC CGACGAGACT CAGGCCACGG TGCGCAGCTG ACGCGTCGAC GCTGCTCTGA GICCGGIGCC AGGATCTCCT TCCTAGAGGA GCATACGCTT CGTATGCGAA CGGATGGAAG GCCTACCTTC AGGCGGGTCA AGGCCCTCG GCCTCTGCCT CGGAGACGGA TCCCGGGAGC ACAAGATGGA TGTTCTACCT CAGACAATCG TCTGGCTGGA CCCGCAAGGA GTGCCGGGGC GTCTGTTAGC GGGCGTTCCT CACGGCCCCG AGACCGACCT TGCGGCGGCT ACGCCGCCGA AGCACGTACT TCGTGCATGA CGCCCCTAAC GCGGGGATTG CCGCCTCCGG TGCAAAAAGC ACGTTTTTCG GCATGATTGA GGCCGAGGCC CGTACTAACT CTGGGCACAA GACCCGTGTT CTTTTTGTCA GAAAAACAGT ACCGGTGCTG TAACCCGCTT GCATCGAGCG TGGCCACGAC ATTGGGCGAA GCTGATGCAA CGACTACGIT CGTAGCTCGC 2801 2871 2941 3011 3081 3151 3221 3291 3361 3431

FIG.9E

GGGCTCGCG CCAGCCGAAC TGTTCGCCAG GCTCAAGGCG CGCATGCCCG ACGGCGAGGA TCTCGTCGTG GETCGCCTTG ACAAGCGGTC CGAGTTCCGC GCGTACGGGC TGCCGCTCCT AGAGCAGCAC TICIGGALIC AICGACIGIG AAGAGCITGG GTAGCGGAAG CGACGCCCAA CGTTTTCCGG GCAAAAGGCC AACTIGITIA TTGAACAAAT GACCTCTAGC CATCGCCTTC GCTGCGGGTT TTTTTCACT AAAAAAGTGA CTGGAGATCG ATTCCACACA GTAATTAACG GCCGGTTGCG CALTAALIGC CGGCCAACGC CGCTCGGTCG GCGAGCCAGC TAAGGTGTGT AAGACCTAAG GATATTGCTG CTATAACGAC ATTCGCAGCG TAAGCGTCGC ACCGACCAAG TGGCTGGTTC GCTTCGGAAT CGAAGCCTTA CGCCCACCCC GCGGGTGGGG AATAAAGCAT TTATTTCGTA GTATACCGTC CATATGGCAG TCCGCTCACA AGGCGAGTGT AGCTAACTCA TGCCAGCTGC ATTAATGAAT ACGGTCGACG TAATTACTTA TGACTCGCTG TCGATIGAGT GGAGCGAGTG ACTGAGCGAC TCCACAGAAT AGGIGICTIA AGGAACCGTA AAAAGGCCGC AAATTTCACA GCCGAATAIC AIGGIGGAAA AIGGCCGCII CCGATGGGCA GCCGCTCCCG GTTCGAAATG GAAATTGTTA TACCGGCGAA GGCTACCCGT CGGCGAGGGC CAAGCTTTAC GAAAGGTTGG CTTTCCAACC TGGAGTTCTT ACCTCAAGAA TTTAAAGTGT TATCATGTCT ATAGTACAGA CTTTAACAAT CTAATGAGTG CCTCGCTCAC GATTACTCAC AATACGGTTA TTATGCCAAT CGGCTTAIAG TACCACCTTT ACATAGCGTT TGTATCGCAA AATGCCATAG GGACTCTGGG CCTGAGACCC CGCCTTCTAT CTAGAGTACG ATAGCATCAC CAATGTATCT TIACGGTAIC GCGGAAGATA GATCTCATGC TATCGTAGIG GTTACATAGA TITCCIGIGI AAACCTGTCG AAAGGACACA CCTGGGGTGC GGACCCCACG TTTGGACAGC TCTTCCGCTT AGAAGGCGAA CAAAGGCGGT GCAAAAGGCC GTTTCCGCCA CGCTATCAGG CTTCTGAGCG TAATGGTTAC AAATAAAGCA GCGATAGTCC AGGAGCACGA TAAGGTGGCG TCCAGTCGGG TCCTCGTGCT GAAGACTCGC ATTCCACCGC CCAGCGCGGG GGTCGCGCCC CCAAACTCAT GGTTTGAGTA GTCATAGCTG CAGTATCGAC AAGTGTAAAG GACGGCGAA AGGTCAGCCC TATTGGGCGC CGCCAAACGC ATAACCCGCG CAAAAGGCCA ATTACCAATG TTTATTTCGT TTCACATTTC TCAGCTCACT CGCTCGCCAT AGTCGAGTGA TACGGACGAA AIGCCIGCII TGTGGCGGAC AACTGCTCAA CGAGATTTCG GCGGTTTGCG ACACCGCCTG CGACTGGCGA CCTACTAGGA TGTGGTTTGT CGGAAGCATA GCGAGCGGTA GCTGACCGCT TIGACGAGIT GCTCTAAAGC GGATGATCCT ACACCAAACA CGTAATCATG GCATTAGTAC GCCTTCGTAT CIGCCCGCII AACATGTGAG CCCGAGCGC ACCCATGGCG GCCGCTGGG ATAGCGGAAG TGGGTACCGC CGGCCGACCC CGGCGAATGG GCCCCTTACC TATCGCCTTC CCTGCCATCA GGACGGTAGT GACGCCGGCT CTGCGGCCGA TTGCAGCTTA AACGICGAAI CGTAAGATCA TAGAGCTTGG ATCTCGAACC TGTATGCTCG TTCGGCTGCG GCATTCTAGT ACATACGAGC GTTGCGCTCA GCGGGGAGAG AAGCCGACGC CGCAGGAAAG CAACGCGAGT CCCCTCTC ~~~~~ 3501 3571 3641 3711 3781 3851 3921 3991 4061 4201 4271 4341 4481 4131 4411

| 4551<br>4621<br>4691<br>4971<br>4971<br>5041<br>5111<br>5181 | GCGTCCTTTC<br>TTTTTCCATA<br>AAAAAGGTAT<br>CGACAGGACT<br>GCCGCTTACC<br>CGGCGAATGG<br>ACGCTACCACT<br>TCGTCGCGC<br>ACCACTGCG<br>TCGTCGGTGA<br>CCTAACTACG<br>GGATTCACG<br>GGATTCACG<br>GCAGATTACG<br>GCAGATTACG<br>CGTCTAATGC<br>TTTCTCAACC<br>GCAGATTACG<br>GCAGATTACG<br>TTTCTCAACC |                                                      | GTTTTCGGGT<br>CCCTGACGGG<br>GGGACTGCTC<br>CAGGCGTTTC<br>GCCCCTTTCT<br>GGCGGAAGA<br>GGTCGTTCGC<br>CCAGCAAGCG<br>AACTATCGTC<br>TTAGCAGAGC<br>AACGACTCTCG<br>AACGACCGTTTG<br>AAGGACCTTTG<br>AAGGACCTTTG<br>AAGGATCTCA<br>AAGGATCTCA<br>AAGGATCTCA<br>AAGGATCTCA | CGTTTTCCGG<br>CATCACAAA<br>GTAGTGTTTT<br>CCCCTGGAAG<br>GGGGACCTTC<br>CCCTTCGGGA<br>GGGAAGCCCT<br>TCCAAGCTGG<br>AGGTTCGAC<br>TTGAGTCCAA<br>AACTCAGGTT<br>AAACCACCGC<br>TTTGGTAGTA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC<br>TTTGGTAGGA<br>AAACCACCGC | TCCTTGGCAT ATCGACGCTG GAGGGAGCAC AGCGTGGGGG TCGCACCGCG GCTGTGTGCA CCCGGTAAGA GGGCGTTCT CCCGGTAAGA GGGCGTCTGCT CCCGGTAAGA GGCCATCTCT TGGTAGCGGT TGGTCGCCA TGGTAGCGGT ACCATCGCCA TTGATCTTTT AACTAAAAAG TATCAAAAAAG TATCAAAAAAG | TTTTCCGGCG AAGTCAGAGG TTCAGTCTCC CGCTCTCCTG GCGAGAGGAC TTTCTCAATG AAAGAGTTAC CGAACCCCC GCTTGGGGGG CACGACTTAT GTCTCAAGAA GGTTTTTTTG CTCGGTCAA GGTTTTTTTG CTACGGGCC CAAAAAAAA GGTTTTTTTG CTACGGGCC CTACGGGGCC CTACGGGGCC CTACGGGGCC CTACGGGGCC CTACGGGGCC CTACGGGGCC CTACGGCCCCC CTACGGGCCCCCC CTACGGGCCCCCCC CTACGGGGCC CTACGGCCCCCCCCCC | CAACGACCGC TGGCGAAACC ACCGCTTTGG TTCCGACCCT AAGGCTGGGA CTCACGCTGC GAGTGCGCC GCCACTGC GAAGTCGCCC GCCACTGCC GCCACTGCC TTCACCACC GCCACTGCC TTCACCACC TAGAAGCCTT TTTGCAAGCA AAACGTTCGT TTTGCAAGCA TGGAAGCCTT TTTGCAAGCA AAACGTTCGT TGACGCTCGT TGACGCTCGT TGACGCTCGT TGACGCTCGT TAGATCCTTT ATCTAGGAAA |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                              | TAAATTAAAA<br>ATTTAATTTT                                                                                                                                                                                                                                                          | ATGAAGTTTT<br>TACTTCAAAA                             | AAATCAATCT<br>TTTAGTTAGA                                                                                                                                                                                                                                     | AAAGTATATA<br>TTTCATATAT                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TGAGTAAACT<br>ACTCATTTGA                                                                                                                                                                                                     | TGGTCTGACA<br>ACCAGACTGT                                                                                                                                                                                                                                                                                                                | GTTACCAATG<br>CAATGGTTAC                                                                                                                                                                                                                                                                         |
| 5321<br>5391                                                 | CTTAATCAGT<br>GAATTAGTCA<br>GTGTAGATAA<br>CACATCTATT                                                                                                                                                                                                                              | GAGGCACCTA<br>CTCCGTGGAT<br>CTACGATACG<br>GATGCTATGC | TCTCAGCGAT<br>AGAGTCGCTA<br>GGAGGGCTTA<br>CCTCCCGAAT                                                                                                                                                                                                         | CTGTCTATTT<br>GACAGATAAA<br>CCATCTGGCC<br>GGTAGACCGG                                                                                                                                                                                                                                                                                                                                                                                                                                   | CGTTCATCCA<br>GCAAGTAGGT<br>CCAGTGCTGC<br>GGTCACGACG                                                                                                                                                                         | TAGTTGCCTG<br>ATCAACGGAC<br>AATGATACCG<br>TTACTATGGC                                                                                                                                                                                                                                                                                    | ACTCCCCGTC<br>TGAGGGGCAG<br>CGAGACCCAC<br>GCTCTGGGGTG                                                                                                                                                                                                                                            |
| 5461<br>5531                                                 | GCTCACCGGC<br>CGAGTGGCCG<br>AACTTTAICC<br>TTGAAATAGG                                                                                                                                                                                                                              |                                                      | TCAGCAATAA<br>AGTCGTTATT<br>AGTCTATTAA<br>TCAGATAATT                                                                                                                                                                                                         | ACCAGCCAGC<br>TGGTCGGTCG<br>TTGTTGCCGG                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CGGAAGGGCC<br>GCCTTCCCGG<br>GAAGCTAGAG                                                                                                                                                                                       | GAGCGCAGAA<br>CTCGCGTCTT<br>TAAGTAGTTC<br>ATTCATCAAG                                                                                                                                                                                                                                                                                    | GTGGTCCTGC<br>CACCAGGACG<br>GCCAGTTAAT<br>CGGTCAATTA                                                                                                                                                                                                                                             |

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| 5601 |            | ACGTIGITGC | AGTITGCGCA ACGITGITGC CALTGCTACA GGCALCGIGG IGICACGCIC GICGILIGGI AIGGCITCAI | GGCATCGTGG | TGTCACGCTC            | GTCGTTTGGT                       | ATGGCTTCAT |  |
|------|------------|------------|------------------------------------------------------------------------------|------------|-----------------------|----------------------------------|------------|--|
|      | TCAAACGCGT | TGCAACAACG | TGCAACAACG GTAACGATGT CCGTAGCACC ACAGTGCGAG CAGCAAACCA                       | CCGTAGCACC | ACAGTGCGAG            | CAGCAAACCA                       | TACCGAAGTA |  |
| 5671 | TCAGCTCCGG |            | TICCCAACGA TCAAGGCGAG                                                        | TTACATGATC | TIACATGATC CCCCATGTTG | TGCAAAAAAG                       | CGGTTAGCTC |  |
|      | AGICGAGGCC |            | AAGGGTIGCT AGTICCGCIC AAIGIACIAG GGGGIACAAC ACGIITITIC                       | AATGTACTAG | GGGGTACAAC            | ACGTTTTTTC                       | GCCAATCGAG |  |
| 5741 | CTICGGICCT |            | CCGATCGTTG TCAGAAGTAA GTTGGCCGCA GTGTTATCAC TCATGGTTAT                       | GTTGGCCGCA | GTGTTATCAC            | TCATGGTTAT                       | GGCAGCACTG |  |
|      | GAAGCCAGGA | GGCTAGCAAC | GGCIAGCAAC AGICIICAII CAACCGGCGI CACAAIAGIG                                  | CAACCGGCGT | CACAATAGTG            | AGTACCAATA                       | CCGTCGTGAC |  |
| 5811 | CATAATTCTC |            | TIACTGTCAT GCCATCCGTA AGAIGCTTTT CTGTGACTGG                                  | AGAIGCITII | CTGTGACTGG            | TGAGTACTCA                       | ACCAAGTCAT |  |
|      | GTATTAAGAG |            | AATGACAGTA CGGTAGGCAT TCTACGAAAA GACACTGACC ACTCATGAGT                       | TCTACGAAAA | GACACTGACC            | ACTCATGAGT                       | TGGTTCAGTA |  |
| 5881 | TCTGAGAATA | GTGTATGCGG | TCTGAGAATA GIGTATGCGG CGACCGAGTT GCTCTTGCCC GGCGTCAATA CGGGATAATA            | GCTCTTGCCC | GGCGTCAATA            | CGGGATAATA                       | CCGCCCACA  |  |
|      | AGACTCTTAT |            | CACATACGCC GCTGGCTCAA CGAGAACGGG CCGCAGTTAT GCCCTATTAT                       | CGAGAACGGG | CCGCAGTTAT            | GCCCTATTAT                       | GCCCCGTGT  |  |
| 5951 | TAGCAGAACT |            | TIAAAAGIGC ICAICAIIGG AAAACGIICI ICGGGGCGAA AACICICAAG                       | AAAACGITCI | TCGGGGCGAA            | AACTCTCAAG                       | GATCTTACCG |  |
|      | ATCGTCTTGA | AATTTTCACG | ATCGTCTTGA AATTTTCACG AGTAGTAACC TTTTGCAAGA AGCCCCGCTT TTGAGAGTTC CTAGAATGGC | TTTTGCAAGA | AGCCCCGCTT            | TTGAGAGTTC                       | CTAGAATGGC |  |
| 6021 | CTGTTGAGAT |            | CCAGTICGAT GTAACCCACT CGTGCACCCA ACTGATCTTC AGCATCTTTT                       | CGTGCACCCA | ACTGATCTTC            | AGCAICTTTT                       | ACTTTCACCA |  |
|      | GACAACTCTA | GGTCAAGCTA | GGTCAAGCTA CATTGGGTGA GCACGTGGGT                                             | GCACGTGGGT | TGACTAGAAG            | TGACTAGAAG TCGTAGAAAA            | TGAAAGTGGT |  |
| 6091 | GCGTTTCTGG | GIGAGCAAAA | GCGTTTCTGG GTGAGCAAAA ACAGGAAGGC AAAATGCCGC AAAAAAGGGA ATAAGGGCGA            | AAAATGCCGC | AAAAAAGGGA            | ATAAGGGCGA                       | CACGGAAATG |  |
|      | CGCAAAGACC | CACTCGTTTT | CACICGITIT IGICCIICCG ITTIACGGCG ITTITICCCI IAITCCCGCI                       | TTTTACGGCG | TTTTTCCCT             | TATTCCCGCT                       | GTGCCTTTAC |  |
| 6161 | TTGAATACTC |            | ATACTCTTCC TTTTTCAATA TTATTGAAGC                                             | TTATTGAAGC | ATTTATCAGG            | GTTATTGTCT                       | CATGAGCGGA |  |
|      | AACTTATGAG |            | TATGAGAAGG AAAAGTTAT AATAACTTCG                                              |            | TAMATAGICC CAAIAACAGA | CAATAACAGA                       | GTACTCGCCT |  |
| 6231 | TACATATTTG |            | AATGTATTTA GAAAAATAAA CAAATAGGGG                                             | CAAATAGGGG | TTCCGCGCAC            | TICCGCGCAC ATTICCCCGA AAAGIGCCAC | AAAGTGCCAC |  |
|      | ATGTATAAAC | TTACATAAAT | CITITIATIT GITTAICCCC AAGCCGCGIG TAAAGGGGCT                                  | GITIAICCCC | AAGGCGCGTG            |                                  | TTTCACGGTG |  |
| 6301 | CIGACGIC   |            |                                                                              |            |                       |                                  |            |  |
|      | GACTGCAG   |            |                                                                              |            |                       |                                  |            |  |

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